IN THE CLAIMS:

Please cancel claims 6 and 7, without prejudice or disclaimer.

Please amend the claims pursuant to 37 C.F.R. 1.121 as follows (see the accompanying "marked up" version pursuant to 1.121):

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1. (Amended) An isolated nucleic acid encoding UDP-N-acetylglucosamine: galactose-β1,3-N-acetylgalactosamine-α-R / N-acetylglucosamine-β1,3-N-acetylgalactosamine-α-R β1,6-N-acetylglucosaminyltransferase (C2/4GnT) having the amino acid sequence SEQ ID NO: 2 or an enzymatically active fragment thereof.

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5. (Amended) An isolated nucleic acid encoding UDP-N-acetylglucosamine: galactose-β1,3-N-acetylgalactosamine-α-R/N-acetylglucosamine- β1,3-N-acetylgalactosamine-α-R β1,6-N-acetylglucosaminyl-transferase (C2/4GnT), wherein said nucleic acid comprises the sequence of nucleotides 1-2319 in SEQ ID NO:1 or sequence-conservative variants thereof.

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8. (Amended) A nucleic acid vector comprising the nucleic acid of

claim 1.

9. (Amended) A vector as defined in claim 8, wherein said nucleic acid comprises the nucleotide sequence of nucleotides 1-2319 in SEQ ID NO:1 or sequence-conservative variants thereof.

19. (Amended) A method for producing C2/4GnT polypeptides, which comprises:

(i) introducing into a host cell the isolated nucleic acid of claim 1 or the nucleic acid vector of claim 8;

(ii) growing the host cell under conditions suitable for human C2/4GnT expression; and

(iii) isolating C2/4GnT produced by the host cell.

21. (Amended) A method for the identification of DNA sequence variations in the C2/4GnT gene, comprising the steps of:

(i) isolating DNA from a patient;

(ii) amplifying C2/4GnT genomic regions by PCR, wherein the amplified genomic regions are at least 95% identical to SEQ ID NO: 1; and

(iii) detecting the presence of DNA sequence variation by DNA sequencing, single-strand conformational polymorphism (SSCP) or mismatch mutation.

B7 Cont

22. (New) An isolated nucleic acid as defined in claim 1, wherein said nucleic acid comprises the nucleotide sequence of nucleotides 496-1812 in SEQ ID NO:1 or sequence-conservative variants thereof.

23. (New) An isolated nucleic acid as defined in claim 1, wherein said nucleic acid comprises the nucleotide sequence of nucleotides 634-1812 in SEQ ID NO:1 or sequence-conservative variants thereof.

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24. (New) A method for screening for DNA sequence variations in the human C2/C4GnT gene comprising the steps of:

(i) amplifying a segment of genomic DNA obtained from a human subject, said segment having at least 95% identity with an exon of a polynucleotide having the sequence of SEQ ID NO: 1; and

(ii) comparing the sequence of the amplified segment with SEQ ID NO: 1 and identifying the differences between the sequence of said segment and

the corresponding exon of SEQ ID NO:1.

25. (New) A nucleic acid vector comprising the nucleic acid of claim 22.

26. (New) A nucleic acid vector comprising the nucleic acid of claim 23.

27. (New) A method for producing C2/4GnT polypeptides, which comprises:

(i) introducing into a host cell the isolated nucleic acid of claim 23 or the nucleic acid vector of claim 26;

B8 cont

(ii) growing the host cell under conditions suitable for human C2/4GnT expression; and

(iii) isolating C2/4GnT produced by the host cell.

28. (New) A cell comprising a vector as defined in claim 25.

29. (New) A cell comprising a vector as defined in claim 26.